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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,199	04/13/2004	Akio Saiki	5000-5167	4036

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EXAMINER	
MATTHEWS, ABRAHAM M	
ART UNIT	**PAPER NUMBER**
1755	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/823,199	SAIKI ET AL.	
	Examiner	Art Unit	
	Abraham M. Matthews	1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/6/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1,5,8 and 9, are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,626,365 to Mori in view of US Patent No. 6,500,537 B1 to Araki et al.

Regarding Applicants' claim 1, Mori teaches a coating composition for use in sliding parts comprising: (a) a binder resin (e.g., tetrafluoroethylenehexafluoropropylene copolymer resin (FEP), tetrafluoroethylene-perfluoroalkylvinyl ether copolymer resin (PFA)), (b) a compound metal oxide (e.g., titanium oxide), (c) polytetrafluoroethylene (PTFE) (solid lubricant), and (d) including at least one of: metal oxide (e.g., titanium oxide), metallic lubricant, metal sulfide, metal fluoride, carbonic solid lubricant, and fibrous material, among others (Mori, ABSTRACT, column 1, line 61 to column 2, line 28, column 3, lines 6-16, and column 5, Table 1).

However, Mori does not specifically disclose said coating composition, wherein a coupling agent has been used. Nevertheless, Araki et al., also drawn to coating compositions for sliding parts, disclose coupling agents, such as silane coupling agents, in said coating composition (Araki et al., column 18, lines 9-21). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the coating composition of Mori by including said coupling agents, as taught by Araki et al., motivated by the fact that Araki et al. teach that said coupling agents act on an interface between an organic element and an inorganic element in such a way as to form a strong bridge between both elements through chemical and physical coupling (Araki et al., column 18, lines 9-12).

Regarding Applicants' claims 5,8,and 9, Mori in view of Araki et al., as applied to claim 1 above, teaches a coating composition for use in sliding parts comprising, a binder resin, a solid lubricant, a coupling agent, and an inorganic metal oxide such as titanium oxide. The limitations of Applicants' claims 5,8, and 9, can be found in Araki et al., column 6, lines 20-21 (claims 5,8); and column 4, line 61 to column 5, line 3 (claim 9).

Claims 2 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,626,365 to Mori in view of US Patent No. 6,500,537 B1 to Araki et al, as applied to claims 1,5, and 8 above, and in further view of Pub No. US 2003/0072969 A1.by Yamazaki et al.

Regarding Applicants' claims 2 and 10, Mori in view of Araki et al., as applied to claims 1 and 8 above, teaches a coating composition for use in sliding parts comprising, a binder resin, a solid lubricant, a coupling agent, and an inorganic metal oxide such as titanium oxide. Mori in view of Araki et al, as applied to claims 1 and 8 above, does not specifically disclose said coating composition wherein, the average primary particle diameter of the titanium oxide powder is 1 μm or less. Nonetheless, Yamazaki et al., also drawn to coating compositions, disclose that titanium dioxide, among other inorganic metal oxide powders, preferably has a particle size of from 0.005 to 2 μm.(Yamazaki et al., page 3, paragraph [0037]).

Yamazaki et al. teach overlapping ranges of particle sizes with the present claims. Overlapping ranges have been held to establish prima facie obviousness. See

in re Malagari, 182 USPQ. 549; In re Wertheim 191 USPQ 90 (CCPA 1976). See also MPEP 2144.05.

Claims 3,4,11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,626,365 to Mori in view of US Patent No. 6,500,537 B1 to Araki et al, as applied to claims 1,5, and 8 above, and in further view of Pub No. US 2002/0039640 A1.by Koyama et al.

Regarding Applicants' claims 3,4,11 and 12, Mori in view of Araki et al., as applied to claims 1,5, and 8 above, teaches a coating composition for use in sliding parts comprising, a binder resin, a solid lubricant, a coupling agent, and an inorganic metal oxide such as titanium oxide. However, Mori in view of Araki et al., as applied to claims 1,5, and 8 above, does not specifically disclose said coating composition wherein the content of the titanium oxide powder in the sliding film formed of the coating composition, relative to the binder resin, or relative to the polyamide-imide, is in the range between : 5% by mass and 35% by mass, inclusive; and 10% by mass and 20% by mass, inclusive, as set forth in Applicants' claims 3,4,11 and 12.

Nevertheless, Koyama et al., also drawn to coating compositions, disclose that the content of said titanium dioxide in the surface film layer formed of a coating composition is about 1 to 10 wt% (Koyama et al., page 2, paragraph [0021], and page 9, claim 4). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the coating composition of Mori by including the content of said titanium dioxide in mass % as taught by Koyama et al.

Koyama et al. teach overlapping ranges of wt % content with the present claims. Overlapping ranges have been held to establish prima facie obviousness. See in re Malagari, 182 USPQ. 549; In re Wertheim 191 USPQ 90 (CCPA 1976). See also MPEP 2144.05.

Claims 6,7,13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,626,365 to Mori in view of US Patent No. 6,500,537 B1 to Araki et al, as applied to claims 1 and 8 above, and in further view of US Patent No. 6,524,661 B2 by Bagala et al.

Regarding Applicants' claims 6,7,13 and 14, Mori in view of Araki et al., as applied to claims 1 and 8 above, teaches a coating composition for use in sliding parts comprising, a binder resin, a solid lubricant, a coupling agent, and an inorganic metal oxide such as titanium oxide. However, Mori in view of Araki et al., as applied to claims 1 and 8 above, does not specifically disclose said coating composition wherein the content of the coupling agent in a sliding film formed of the coating composition, relative to the binder resin, or relative to the polyamide-imide, is in the range between: 0.1% by mass and 10% by mass, inclusive; and 2% by mass and 8% by mass, inclusive, as set forth in Applicants' claims 6,7,13, and 14. Nevertheless, Bagala et al., also drawn to coating compositions, disclose that the content of said silane coupling agent in a film formed of a coating composition is about 0.1 to 10 wt% (Bagala et al., column 4, lines 18-19).

Bagala et al. teach overlapping ranges of wt % content with the present claims. Overlapping ranges have been held to establish prima facie obviousness. See in re Malagari, 182 USPQ. 549; In re Wertheim 191 USPQ 90 (CCPA 1976). See also MPEP 2144.05.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abraham M. Matthews whose telephone number is (571) 272-2495. The examiner can normally be reached on M-F 8:00 -4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AMM

J.A. LORENGO
SUPERVISORY PATENT EXAMINER